English
Instruction Guide

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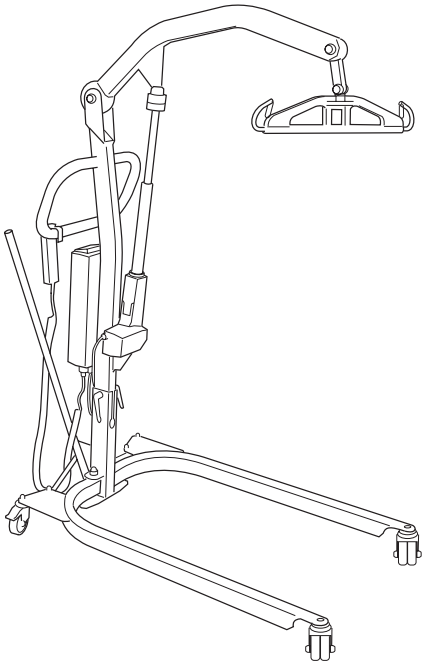

Nordic Caroli 101

Prod. no. 5011001

Nordic Caroli is an electrically-powered mobile lift, designed to be used in most of the common lifting situations, for example between the bed and a wheelchair, to and from the toilet or bathtub and lowering and raising patients from the floor.

Caroli can be adjusted to three different heights to give you the most appropriate lifting range. The mid-range is the standard position, while the lower position may be the most suitable for lifting children. The upper position may be needed for higher lifts, for example to beds and gurneys that cannot be adjusted in height.

△ **”Caution!” triangles are used to warn of situations that demand extra care and attention.**

In this document, the person being lifted is called the ”patient” and the person helping is called the ”caregiver”.

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Safety Instructions

Before use, make certain that:
- the lift is assembled according to the instructions
- lifting accessories are correctly applied to the lift
- the batteries have been charged for at least 10 hours
- you have read and understood the instruction guides for the lift and lifting accessories
- personnel using the equipment have received appropriate instructions and training
- you have selected the correct type, size, material, and design of slings and accessories to safely meet the patient's needs

Before lifting, <u>always</u> make certain that:
- the lifting accessories are not damaged
- the lifting accessory is correctly and securely applied to the patient, so that no personal injury can occur
- the lifting accessory is correctly applied to the lifting equipment
- the sling's strap loops are correctly fastened to the slingbar hooks when the sling strap is extended, but before the patient is lifted from the underlying surface

CE VERIFIED EMC SEMKO

Nordic Caroli 101 is tested by an accredited testing institute and complies with the requirements of directives for medical technical Class 1 products (MDD 93/42/EEC).

Nordic Caroli 101 complies with the requirements according to IEC 60601-1, EN 60601-1-2 and EN ISO 10535:1998.

The lift is not suitable for use in the presence of flammable mixtures.

Maximum load: 160 kg (350 lbs.)

⚠ **Important!**

Lifting and transferring a patient always involves a degree of risk. Study the instruction guide for both lift systems and accessories carefully. A complete understanding of the contents of instructions is essential. Only trained personnel should use the equipment.

Make certain that the lift accessories are appropriate for the lift you are using and for the lifting situation. Exercise caution and care when using lift equipment and accessories.

As a caregiver, you are responsible for the patient's safety. You must be well informed of the patient's condition and ability to manage the lifting situation.

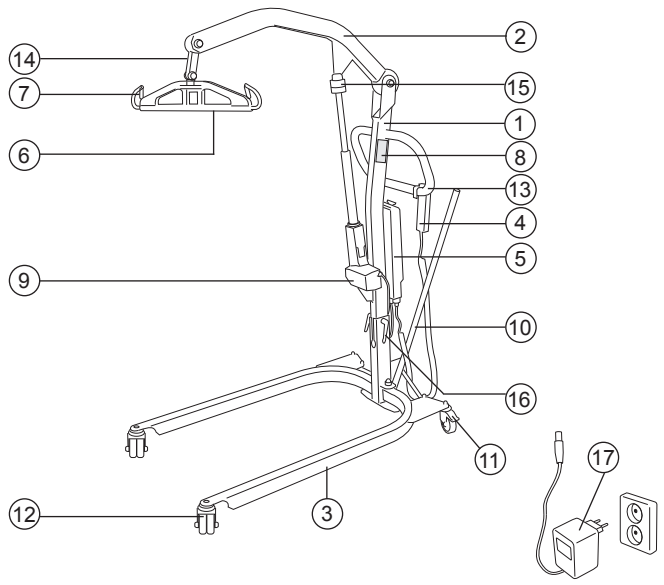
Inspect the sling regularly, especially after laundering. Check carefully for wear and damage to seams, fabric, straps and strap loops.

Never use damaged accessories!

When in doubt, contact the manufacturer or supplier.

Nordic Rehab has an agreement with Liko AB, which means that many lift accessories from Liko can be used together with Nordic Rehab's lifts. Contact your distributor for more information.

Product Description



1. Mast
2. Lift arm
3. Base
4. Handcontrol with cable
5. Control unit with battery, emergency stop and electrical emergency lowering
6. Slingbar
7. Safety latch
8. Product decal
9. Motor/actuator for lift movement
10. Lever for base width adjustment
11. Rear wheel with brake
12. Front wheel
13. Handle
14. Flexlink
15. Emergency lowering (mechanical)
16. Locking handle
17. Charger (separate)

Lifting speed: 2.0 cm/s (0.8 inch./s) without load.

Batteries: Two 12 V 2.9 Ah valve regulated rechargeable gel-type leadacid batteries.
New batteries are provided by the supplier.

Charger: External charger, 100-230 V, 50-60 Hz, max 220 mA.

Motor (mast): 24 V, permanent magnetic motor with mechanical safety mechanism.

Wheels: Standard front: 75 mm (2.95 inch.) dual.
Standard rear: 75 mm (2.95 inch.) with brake single wheel.
Alt.: 100 mm (3.94 inch.) single wheel.

Material: Painted steel with lacquer top coat.

Emergency lowering: Mechanical (patented) and electrical.

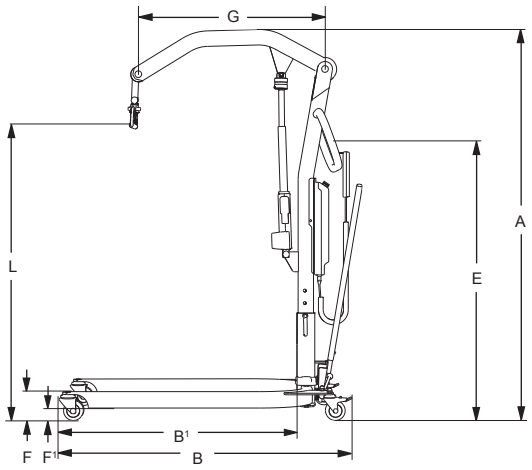
Intermittent operation: Int. Op 10/90, active operation max 2 min. Out of a time of 100, active must be less than 10, however not more than 2 min.

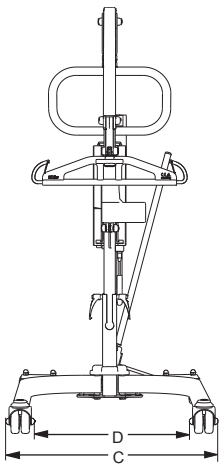
Degree of protection: IP X4

This device is built for indoor operation.

Type B according to the degree of protection against electric chock.

Class II equipment.





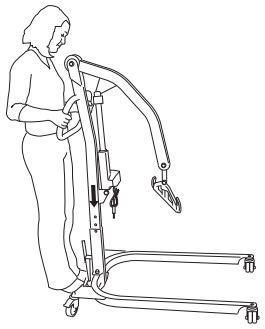
Caroli	Max. load	L		A		B	B¹	C	D	E	F	F¹	G	Weight		Turning diameter
		Max.	Min.	Max.	Min.									Total	Part	
A:	160	167 162 157	60 55 50	188 183 178	143 138 133	116	97	72-120	55-103	100-110	11/15	3	76	37	18	127
B:	350	66 64 62	24 22 20	74 72 70	56 54 52	46	38	28-47	22-41	39-43	4/6	1.2	30	82	40	50

A: Capacity and weight in kg. Measures in cm.
B: Capacity and weight in lbs. Measures in inch.
** These measures depend on in which hole the mast is levelled and secured. See assembly instructions page 4.*
*** 11 cm (4 inch.) is standard. 15 cm (6 inch.) is valid when the wheel diameter is 100 mm (3.9 inch.).*

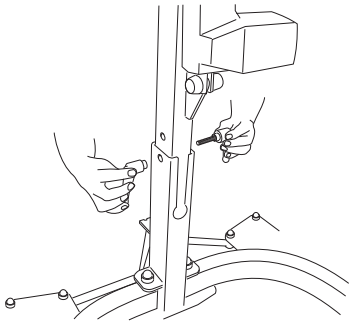
Assembly Instructions

Before assembling, check that you have the following parts:

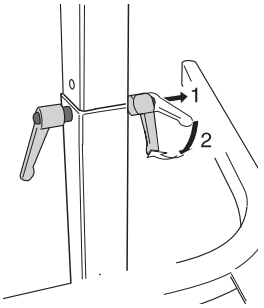
- Mast with lift arm, lift motor, locking handles, flexlink, slingbar with safety latches and 2 pcs. of screws (M6x12)
- Control unit with rail
- Base
- Lever for base width adjustment
- Handcontrol with cable
- Bag containing instruction guide, charger, Allen wrench (4 mm) and label "Using the lift



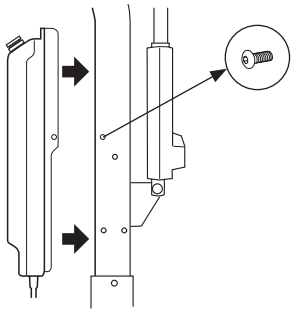
1. Remove the locking handles from the base and place the mast in the socket on the base, as indicated in the illustration.



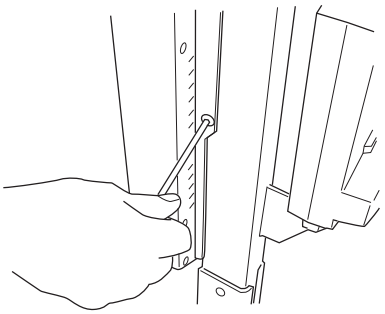
2. Lifting height can be set at three different levels. Choose one of the three holes, as in the illustration above. The middle hole is recommended in most cases. The lower hole is recommended when extra high lifting height is desired, and the upper hole is recommended for lifting at a lower level. Holes are placed at 50 mm (2 inch.) intervals.
See table on page 3.



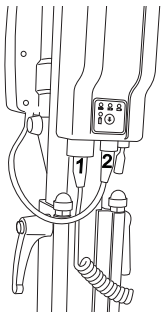
3. Secure the mast in the desired position in the base with the accompanying locking-handles. Adjust the handles so that they are vertically aligned.



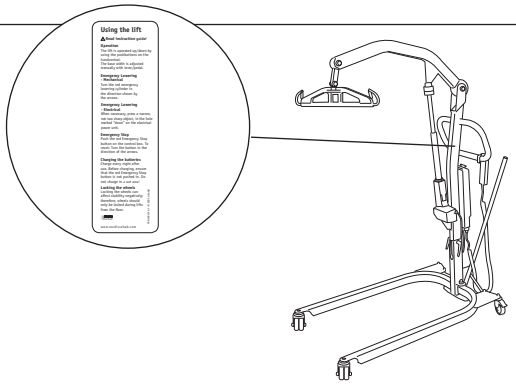
4. Remove the screws (2 pcs.) placed on the mast (see illustration). Place the control unit with the pre-mounted rail on the mast, as shown in the illustration.



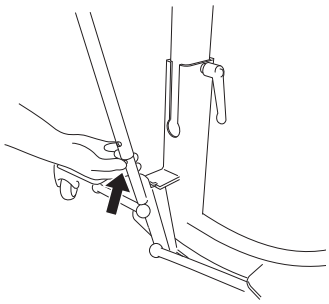
5. Affix the control unit on the mast with the screws that were removed in step 4. Use the accompanying Allen wrench.

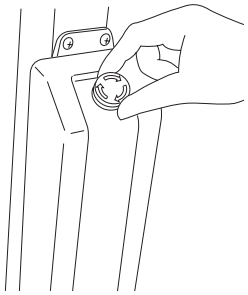


6. Connect cables as follows:
   - Cable handcontrol to outlet 1
   - Cable lift motor to outlet 2



7. Stick the label "Using the lift" (included in bag containing instructions) on one side of the mast.





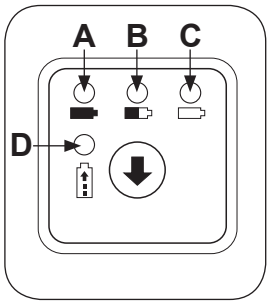
8. Mount lever for base-width adjustment:
   - Press in the catch on the base with one finger.
   - Slide lever into place.
   - Turn the lever until it clicks securely in place on the base.

9. Reset the emergency stop by turning the button in the direction shown by the arrows.

After assembly, check to ensure that:

- lift arm motions correspond with the buttons on the handcontrol
- emergency lowering works properly (mechanical and electrical)
- wheel brakes work properly
- the indicator lamp on the front of the control unit lights during charging
- that the screw and nut is securely fastened in the bolt that holds the slingbar

Charging the batteries



A display on the control unit indicates battery capacity. When the handcontrol is activated, a diode/lamp lights, indicating battery capacity.
Green (A): min. 50%
Yellow (B): 25-50%
Yellow (C): 0-25%
Lamp lights for 10 seconds after activating.
Another lamp indicates that charging is in progress (D).

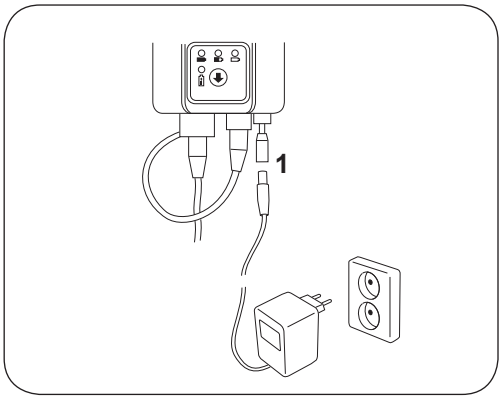
For maximum service life, it is important that batteries be charged regularly. We recommend charging after use or each night.

Maximum charge is reached after about 10 hours. When the batteries are fully charged, the charger disconnects automatically. **NOTE! An indicator lamp on the control unit lights constantly during charging. When the batteries are fully charged, the lamp shuts off. If the lamp continues to light after 12 hours, the batteries probably need to be replaced. Discontinue charging and replace batteries.**

Never charge batteries in a wet area!

If the lift is not in daily use, we recommend that the emergency stop be pressed in after the lift has been used. This breaks the current and conserves battery power.

Charging procedure



With external charger:

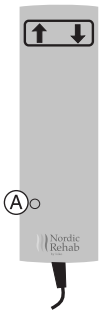
1. Connect charger cable to outlet for charger, under the control unit.
2. Connect charger to power supply (100-230V~).

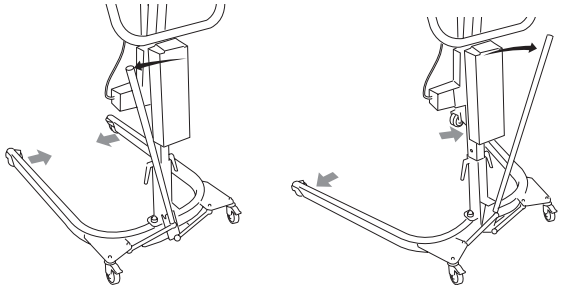
⚠ **NOTE! The lift must not be used while connected to the battery charger!**

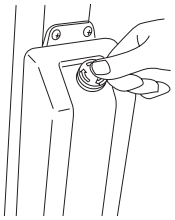
Pb

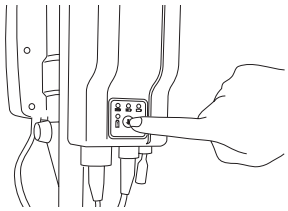
Old batteries are to be left to personnel authorized by Nordic Rehab, or at the nearest station for environmental recycling.

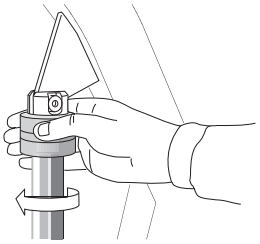
User's Guide

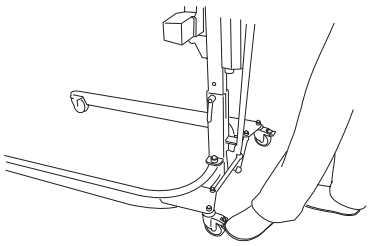


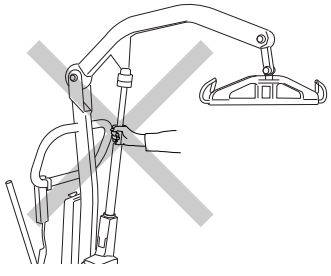












Operation

Caroli is operated by pressing the buttons on the handcontrol.
For raising and lowering the lift arm:
press ⬆ and ⬇, respectively.
Directional arrows show the direction of movement.
Lifting motion stops as soon as the push-button is released.
If the battery needs charging, a lamp (A) is lit on the handcontrol. There is, however, enough power left in the battery for several lifts.

Base width adjustment

The base width of Caroli is manually adjusted by a lever. The lever can be placed in several different positions. Move the lever backwards to unlock it, and then move it sideways to adjust the width. The lever locks automatically when released.

Emergency Stop

For emergency stop: Press the red Emergency stop button.
To release/reset: Turn the button in the direction of the arrows.

Electrical emergency lowering

The lift arm is lowered electrically by pressing “down” (⬇) on the control unit.

Mechanical Emergency Lowering

To use the Emergency Lowering:
Turn the red Emergency Lowering cylinder in the direction shown by the arrows.

Locking the wheels

The rear wheels can be locked for rotation and lateral movement. To lock the wheels, press the brake lever above the wheel down with your foot.
Release the wheels by pressing the top side of the lever.
During lifting, wheels should remain unlocked so that the lift may shift to the patient's center of gravity. The wheels should however be locked if there is a risk for the lift moving into the patient, for example when lifting from the floor.

△ Locked wheels during lifting increases the risk of the lift tilting over.

△ Never pull the lift by the actuator! This may result in damage to the lift and possible injury.

Slings and accessories

We recommend Nordic Universal Sling and Nordic Hygiene Sling for use with Caroli.
Pages 8-10 in this instruction guide include a user description for Nordic Universal Sling and Nordic Hygiene Sling.
An individual assessment, of slings and other accessories, is necessary for optimal function and security when using the lift. As an alternative to the Nordic Slings, several slings from Liko can be used with Caroli.

Contact your Nordic Rehab representative or visit www.nordicrehab.com or www.liko.com for advice and information.

Nordic Slings

Material: Polyester

Laundry instructions:

Always read the laundry instructions on the sling's label before washing!

Nordic's slings are approved for 160 kg (350 lbs.) maximum load, see product label.

The size of the sling can be found on the label. The colour of the central back strap is also indicating the size of the sling, for example: yellow = medium, blue = large.

△Remember!
- Determine, in each case, whether more than one caregiver is required to safely execute the lift.
- Plan the lift/transfer before starting, so that it can be executed as safely and efficiently as possible.
- Although Caroli's slingbar is equipped with safety latches to prevent straps from accidentally unhooking, particular attention is necessary: after tension has been applied to the straps, but before the patient has been lifted, it is important to check that the straps are hooked correctly on the slingbar!
- Never lift a patient higher than necessary. Consider the patient's individual needs and condition.
- Never leave a patient unattended during a lift/transfer.
- Ensure that wheels on wheelchairs, beds, gurneys, etc. are appropriately locked during the lift/transfer.

△ The handles on the sling are intended to steer with, not to lift with. Excessive force on the handles can cause the sling to tear. Do not lift with the handles!

CE Class 1 medical-technical product

Nordic Universal Sling and Nordic Hygiene Sling comply with all requirements for MDD Class 1 products and the harmonized EN ISO 10535 standard.

Nordic Universal Sling

Prod. no.	Size	Body weight*
5037105	M Medium	50-90 kg (110-198 lbs.)
5037106	L Large	80-120 kg (176-264 lbs.)

*__NOTE!__ Indicated patient weights are just guidelines. Deviations may occur.

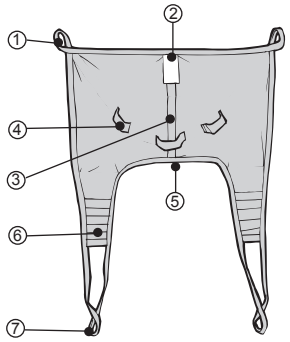
If the sling is too large, the patient may risk slipping out of it. A sling that is too small can be tight in the crotch and cause discomfort.

Nordic Hygiene Sling

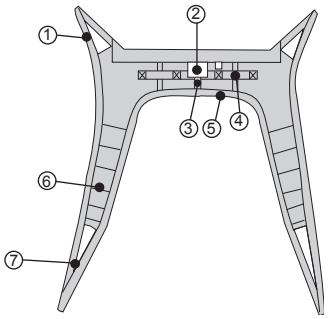
Prod. no.	Size	Body weight*
5037305	M Medium	40-90 kg (88-198 lbs.)
5037306	L Large	80-120 kg (176-264 lbs.)

*__NOTE!__ Indicated patient weights are just guidelines. Deviations may occur.

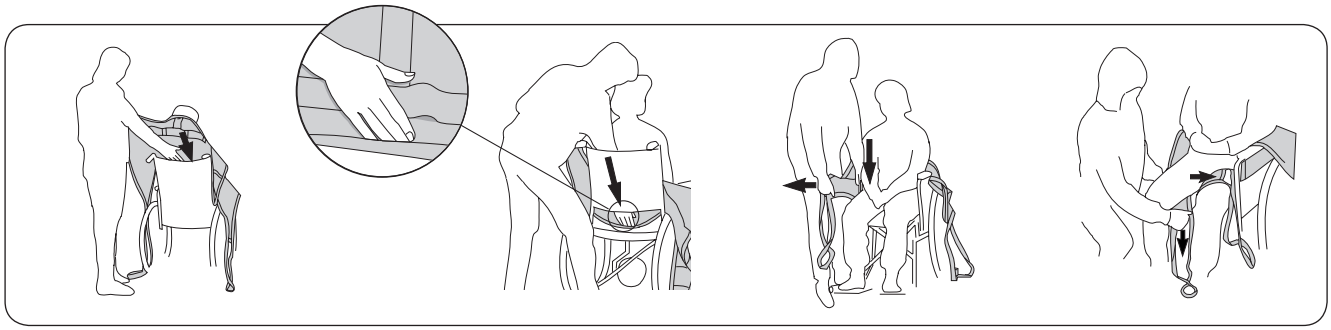
If the patient has poor muscle tone and sinks down in Hygiene Sling, try a smaller size.



1. **Upper strap loop**
2. **Serial number**
3. **Center back strap/Size marking**
4. **Label**
5. **Handle**
6. **Lower edge**
7. **Leg support**
8. **Leg support loop**



Nordic Universal Sling

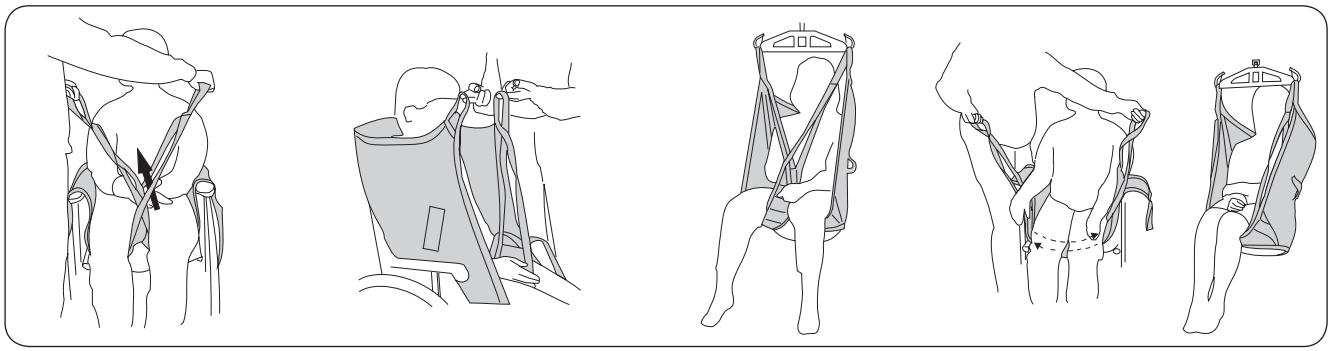


Place the sling behind the patient's back with the label facing out.
Fold the lower edge over your fingertips to make it easier to guide the sling into position.

With the palm of your hand, press the lower edge of the sling down to the patient's tailbone. **This is very important**. Correct positioning is facilitated if the patient leans forward somewhat.

Pull the leg supports out alongside the outside of the thighs. **Helpful hint:** By placing your palm between the body and the sling, you can guide the leg support's lower edge strap down to the seat. At the same time, pull the leg support forward with your other hand to stretch it out.

Guide the sling's leg supports under each thigh. Make sure the fabric is smoothed out under the thighs and that it reaches properly around the legs.



Normally, one leg support is passed through the other before they are hooked to the slingbar.

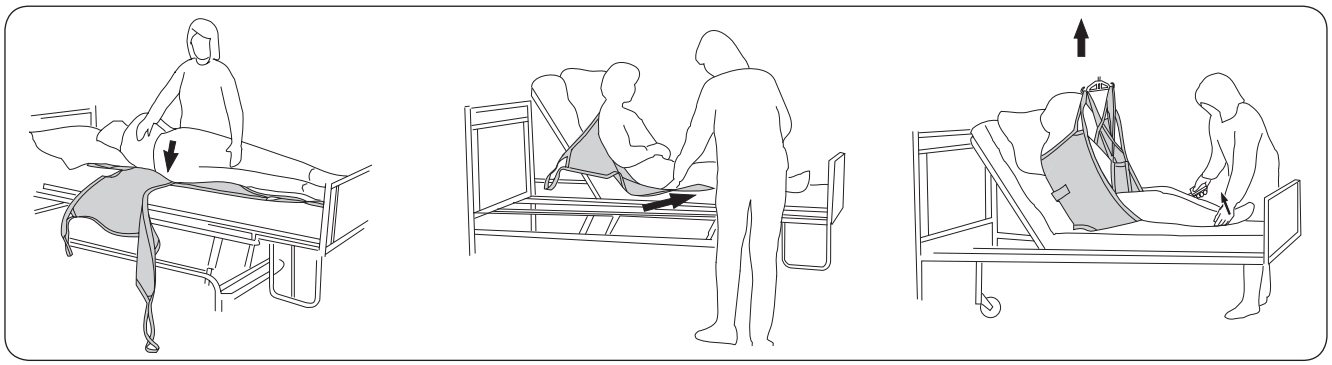
Make sure all strap loops are of equal length, i.e., reach the same height when they are extended before lifting. If not, adjust the position of the sling.

Hang the upper strap loops on the slingbar first, then the leg support loops.

Alternative:
Overlapping under both legs. This may be the most appropriate method when lifting a leg amputee.

Lifting from a horizontal position

Normally it is easiest to apply the sling if the patient is lying down. In some cases, however, it may be more appropriate to apply the sling while the patient is sitting upright in the bed.

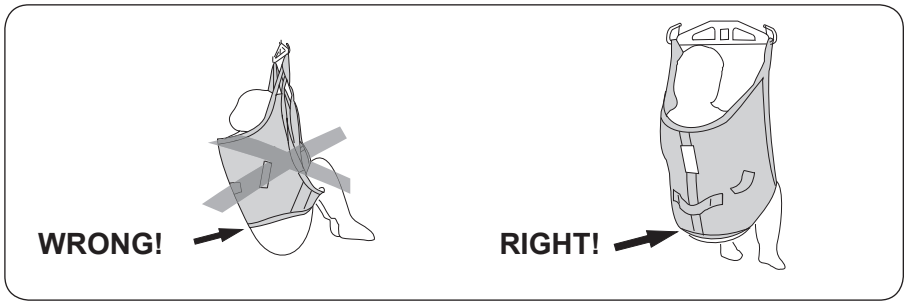


Turn the patient towards you to prevent him/her from falling out of the bed. Place the lower edge of the sling as far down under the patient as possible, so that it is **in level with the tailbone**. Bunch the sling together in a couple of folds and lay it so that its “central back strap” corresponds to the position of the patient’s spine when he/she is gently turned back. Carefully work the sling out from the opposite side. Raise the backrest of the bed if available.

Lay the leg supports in place under the thighs. This is easiest if the knees are bent. Make sure the fabric is smoothed out under the thighs and that it reaches properly around the legs. The leg supports can then be hooked to the slingbar in different ways, as described on the previous page.

Hang the upper strap loops to the slingbar first, then the lower loops. Lift.

The patient is not properly positioned – what did we do wrong?



The bottom is hanging down - risk for slipping out of the sling. The sling may be too large. Another reason may be that the sling has not been pulled far enough down the back during application.
Before lifting make sure that the sling has been tightened about the buttocks (by pulling on the leg supports).

The sling’s lower edge is in level with the patient’s tailbone. Leg supports are correctly positioned under the legs.

Nordic Hygiene Sling

With Hygiene Sling, dressing and undressing can be done during the actual lifting operation, thanks to the large opening around the seat of the sling.

Nordic Hygiene Sling is often the most appropriate alternative for patients with a certain degree of stiffness. The patient should have relatively good torso stability to be able to sit comfortably and securely in Hygiene Sling. For patients with poor muscle tone, we recommend a smaller size of Hygiene Sling.

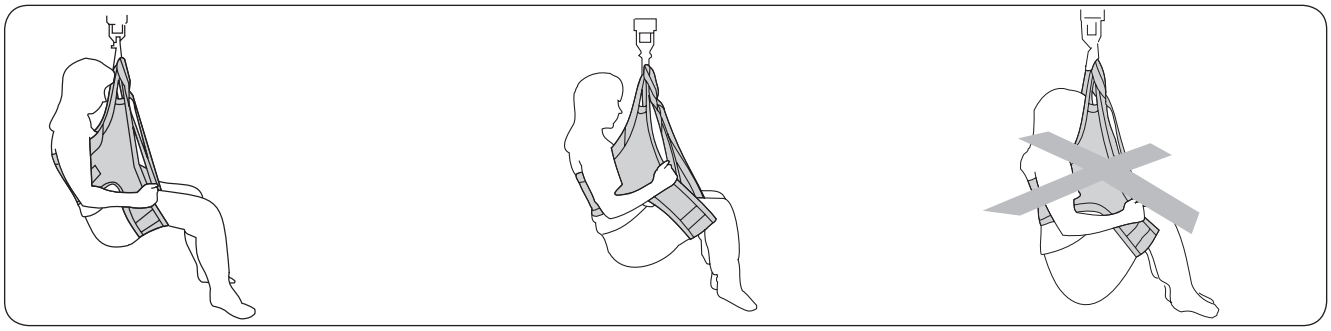
△ **The patient’s arms must be held outside Hygiene Sling during the entire lifting procedure, to prevent the risk of sliding out of the sling.**

Continued on next page

Continuation of Nordic Hygiene Sling from previous page:

Advice for trial fitting

△ **The position of the leg supports under the thighs is important in regard to the patient's sitting posture. On a patient with poor muscle tone, they should be placed high up against the crotch, so that he/she does not sink too far down in the sling.**



In most cases, and especially in the case of patients with weak musculature, the leg supports should be placed as close as possible to the crotch.

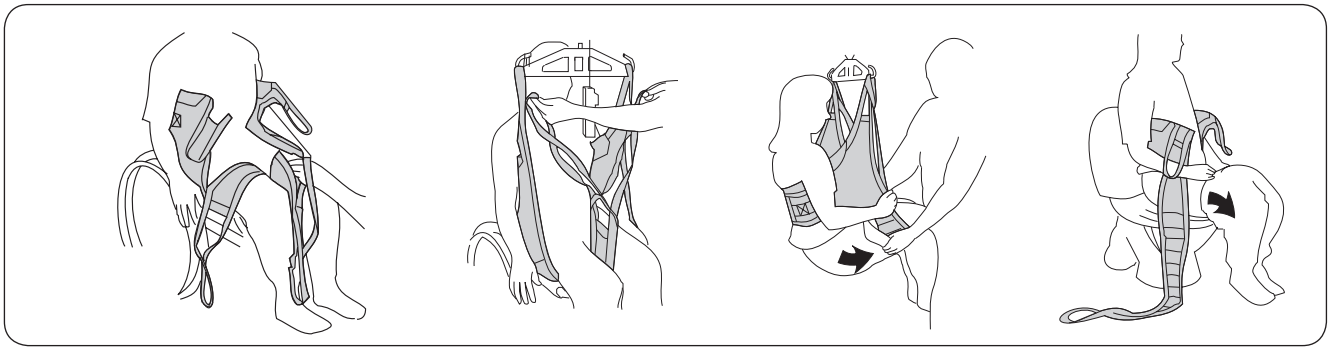
On a patient with good muscle tone, the leg supports can be placed closer to the knees. This makes dressing and undressing easier and helps to ease spasticity.

A sunken and uncomfortable sitting posture is either a result of the leg supports being placed too close to the knees and/or the sling being too large. Try a smaller size.

Lifting from wheelchair to toilet

Prepare to undress the patient by first undoing buttons and opening zippers.
Place Hygiene Sling behind the patient, with the label facing out about halfway down the back. The soft-padded upper edge should be just under the armpits.

△ **Always keep the arms on the outside!**



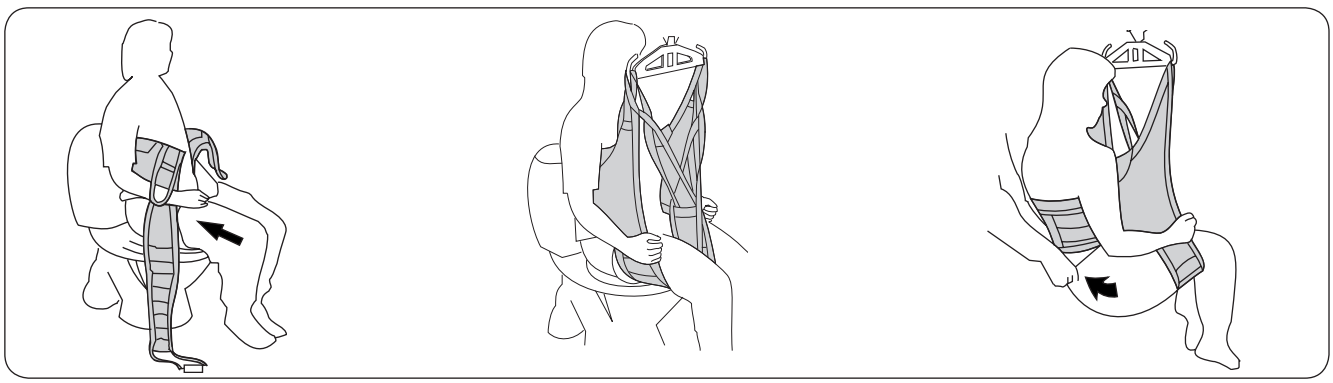
Place the leg supports under the patient's thighs. Cross the leg supports by drawing one leg support loop through the other.

Move the slingbar forward and connect the upper end loops first, then the leg-support loops.

Lift up. Pull the patient's pants down as far as possible.

Lower to the toilet. Move the leg supports aside and lower the patient's pants even further to enable better access.

Return from toilet to wheelchair



Pull the trousers up as far as possible towards the crotch.

Place the leg supports under the legs, but outside the trousers.
△**Arms on the outside!**
Connect all the loops, and lift up.

If a diaper is to be used, fit it in place before the trousers are pulled all the way up. Make the transfer and lower to the chair.

Simple troubleshooting

The lift does not work up/down

1. Check that the emergency stop button is not pushed in. (p. 6)
2. Check that the cables on the control unit are connected correctly. (p. 4)
3. Check that the charging cable is not connected to the wall socket.
4. Check that the battery is charged. (p. 5)
5. *If the lift still does not work satisfactorily, contact your Nordic Rehab distributor.*

Battery charging does not work

1. Check that the emergency stop button is not pushed in. (p. 6)
2. *If the lift still does not work satisfactorily, contact your Nordic Rehab distributor.*

The lift stops in the elevated position

1. Check that the emergency stop button is not pushed in. (p. 6)
2 Use the electrical emergency-lowering device to safely lower the patient. (p. 6)
3 Use the mechanical emergency-lowering device to safely lower the patient. (p. 6)
4. Check that the battery is charged. (p. 5)
5. *If the lift still does not work satisfactorily, contact your Nordic Rehab distributor.*

If you hear unusual sounds

Contact your Nordic Rehab distributor.

Care and Maintenance

For safe and trouble-free operation, a few routine procedures should be performed every day the lift is used.

- Visually inspect the patient lift and check for external damage or wear
- Check that all screws and lock nuts on the slingbar are tight
- Check that the safety latches on the slingbar work properly
- Check the handcontrol and the lift and width movements
- Check the emergency lowering function (both the electrical and the mechanical)
- Charge the battery every day the lift is used, and check charger function

If When necessary, clean the lift with common surface cleaners or disinfectants and check to ensure that the wheels are free of dirt and hair. **NOTE! Avoid regular use of cleaning agents that contain phenol or chlorine, since these can damage polyamide material.**

Inspection

The lift must be thoroughly inspected at least once per year. Pay particular attention to parts that show wear, for example, joints and bolts. Service must be carried out according to Nordic Rehab service manual and by authorized staff.

> ⚠ ***IMPORTANT!***
>
> Repairs and maintenance may only be carried out by authorized Nordic Rehab service personnel using original spare parts.

Transportation and storage

During transportation, or when the patient lift is not to be used for some time, the emergency stop button should be pushed in. The environment in which the lift is transported and stored should have a temperature of 10 to 40 degrees C, a relative humidity of 30 to 75 % and an atmospheric pressure of 700 to 1060 hPa.

We always try to improve our products. Naturally, this means changes from time to time.
Please contact your Nordic Rehab distributor for information and advice and to receive the latest updates.

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Nordic Rehab

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